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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,213	08/02/2006	Oral Aydin	293602US0PCT	6595

22850 7590 03/21/2012

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EXAMINER	
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ART UNIT	**PAPER NUMBER**
1712	

NOTIFICATION DATE	DELIVERY MODE
03/21/2012	ELECTRONIC

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ORAL AYDIN,
ANDREE DRAGON, and STEFAN KIRSCH

Appeal 2011-006474
Application 10/588,213
Technology Center 1700

Before CHARLES F. WARREN, JEFFREY T. SMITH, and
MARK NAGUMO, *Administrative Patent Judges*.

NAGUMO, *Administrative Patent Judge*.

DECISION ON APPEAL

A. Introduction[1, 2]

Oral Aydin, Andree Dragon, and Stefan Kirsch ("Aydin") timely appeal under 35 U.S.C. § 134(a) from the final rejection[3] of claims 18, 19, and 21-23. We have jurisdiction. 35 U.S.C. § 6. We AFFIRM-IN-PART.

The subject matter on appeal relates to processes for applying multilayer coatings to substrates such as paper, polymeric films, or metallized surfaces. (Spec. 4, ll. 34-36.) The applied films have different compositions and properties, and can be, for example, self-adhesive systems (*id.* at l. 35), multilayer paint films (*id.* at 5, l. 2), or multilayers having an elastic inner layer and a hard outer layer (*id.* at ll. 3-5).

Sole independent claim 12 reads:

> 12. A process for applying at least two chemically different flowable media to a substrate, comprising the following step:
>
> b) applying
>
> at least two chemically different flowable media, at least one medium being an aqueous polymer dispersion,
>
> to said substrate which is in the form of a web

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[1] Application 10/588,213, *Method and Device for the Application of at Least Two Chemically Different Flowing Media*, filed 2 August 2006 as the national stage of an international application filed 16 February 2005, claiming the benefit of an application filed in Germany on 18 February 2004. The specification is referred to as the "213 Specification," and is cited as "Spec." The real party in interest is listed as BASF SE. (Appeal Brief, filed 2 August 2010 ("Br."), 1.)

[2] A request for hearing was withdrawn on 1 March 2012.

[3] Office action mailed 2 September 2009 ("Final Rejection"; cited as "FR"). Appellants do not appeal, and we do not review, the rejections of the remaining claims 12-17 and 24.

> continuously in one operation via a multiple cascade die, wherein:
>
> i) the total amount of the multilayer application ranges from 2 g/m^2 to 200 g/m^2 and
>
> ii) the ratio of the thicknesses of the individual layers within the multilayer application to one another ranges from 0.1 to 100.

(Br., Claims App. i; indentation and paragraphing added.)

Appealed claims 18, 19, and 21-23 depend, directly or indirectly, from claim 12.

Appealed claim 18 requires that "two layers of cationic and anionic polymers are applied whose characteristic upon being layered tend toward gelling or coagulation." (Br., Claims App. i.) Claim 19 is similar to claim 18. (*Id.*)

Claims 21 and 22 require that one of the layers "is of a polyisocyanate, polyepoxides or polyacyridines[4] and another chemically different layer is a dispersion." (Br., Claims App. i-ii.)

Claim 23 requires that the two layers be selected from a Markush group of certain polymer dispersions, wax emulsions, and silicone emulsions. (Br., Claims App. ii.)

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[4] sic [?]:, polyaziridine, i.e., based on a (CH_2- CH_2-N-) ring as the polymerizable moiety.

For completeness, we note that the Examiner maintains the following grounds of rejection:[5]

A. Claims 12, 13, 15-17, and 20 stand rejected under 35 U.S.C. § 102(b) in view of Hughes.[6]

B. Claim 14 stands rejected under 35 U.S.C. § 103(a) in view of the combined teachings of Hughes and Kitamura.[7]

C. Claims 18, 19, and 21-23 stand rejected under 35 U.S.C. § 103(a) in view of the combined teachings of Hughes and Yoshioka.[8]

D. Claim 24 stands rejected under 35 U.S.C. § 103(a) in view of the combined teachings of Hughes, Yoshioka, and Wilson.[9]

As noted *supra*, however, only Rejection C is before us for review.

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[5] Examiner's Answer mailed 19 October 2010 ("Ans.").

[6] Donald James Hughes and Jack Francis Greiller, *Coating Method and Apparatus*, GB 1,276,381 (1972).

[7] Ryu Kitamura, *Ink Jet Recording Material*, U.S. Patent Application Publication 2003/0134093 A1 (2003)

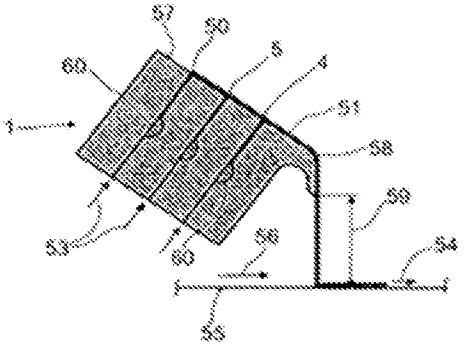
[8] Yasuhiro Yoshioka et al., *Photothermographic Material*, U.S. Patent 6,485,898 B2 (2002).

[9] John E. Wilson et al., *Waterproofing Laminate with Integral Release Coating*, U.S. Patent 5,254,661 (1993).

B. Discussion

Findings of fact throughout this Opinion are supported by a preponderance of the evidence of record.

The claimed invention is a process of applying thin coats simultaneously to a substrate via a "multiple cascade die," a version of which is illustrated in Specification Fig. 4.2, shown below:



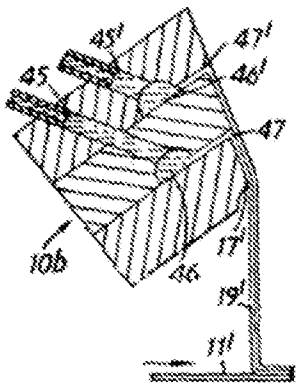
{Fig. 4.2 shows a multiple cascade die}

Different materials flow through separate channels **53**, forming a multilayer film **51** that impinges on moving substrate **55**. (Spec. 8, l. 34 to 9, l. 7) The flowing materials may be, for example, aqueous solutions of polymeric dispersions for preparing adhesives, paints, and coatings. (*Id.* at 8, ll. 37-40.) The substrate may be a web such as paper, film, or a metallized surface. (*Id.* at 7, ll. 16-17.)

Aydin argues that the Examiner erred in finding that Hughes describes or suggests multilayer applications ranging from 2 g/m^2 to 200 g/m^2, and having a thickness ratio ranging from 0.1 to 100. (Br. 6.)

Aydin does not, however, discuss Hughes Example 17, on which the Examiner relies as evidence of anticipation of claim 12 (FR 2; Ans. 4). Hughes reports in Example 17 (Hughes 14, ll. 80-90) that a bilayer

comprising a colloidal silver gelatin solution as the top layer and a cyan dye-[silver halide] developer dispersion as the bottom layer, was deposited on a cellulose acetate film support using a dual slide hopper of the type shown in Fig. 7, which is reproduced below.



{Fig. 7 shows layers poured from a multiple cascade die}

The coverages of the upper gelatin layer and the lower developer layer were 103 g/m^2 and 21.6 g/m^2, respectively. (*Id.* at ll. 86-89.) The total coverage is in the range of 2 g/m^2 and 200 g/m^2 recited in claim 12, and only an unreasonable ratio of densities of the aqueous dispersions (greater than a factor of five for the gelatin solution versus the developer dispersion) could result in a thickness ratio of the individual layers less than 0.1.

Thus, we are not persuaded of harmful error as to the common elements of the rejected claims that are recited in claim 12. We therefore turn to the further limitations recited in claims 18, 19, and 21-23, which, the Examiner finds (FR 5-6; Ans. 7), are supplied by Yoshioka, which describes various layered photothermographic materials. The Examiner concludes (FR 6; Ans. 8) that because Hughes teaches that any material or mixtures of materials that can be put into liquid form can be coated by the disclosed method (Hughes 7, ll. 3-10), with substantially no intermixing between

adjacent layers (*id.* at 3, ll. 3-12), it would have been obvious to use materials described by Yoshioka in processes of making multilayer films described by Hughes.

Aydin, in the principal Brief on appeal, simply denies that there is any disclosure or suggestion in Yoshioka of using materials in adjacent layers that would tend to gel or coagulate when placed in contact with one another. (Br. 6, last para.) Somewhat more particularly, Aydin argues that although Yoshioka may list anionic, nonionic, and cationic dispersing agents, Yoshioka does not suggest anionic polymers in one layer with cationic polymers in an adjacent layer. (Br. 7, 1st para.)

The passages (Yoshioka col. 18, ll. 31-46, and col. 23, ll. 65-67) cited by the Examiner (FR 5; Ans. 7), do no more than identify surfactant polymers or dispersing agents that may be useful for dispersing silver salts of organic acids. The Examiner has not directed our attention to credible evidence that Yoshioka teaches or suggests depositing a layer of cationic polymers next to a layer of anionic polymers—or, to use the language of claim 18—that "two layers of cationic and anionic polymers are applied whose characteristic upon being layered tend toward gelling or coagulation." We therefore REVERSE the rejection of claims 18 and 19.

Regarding the remaining claims, Aydin simply denies, in the principal Brief, that Yoshioka teaches the flowable media of the materials recited in claims 20-23. (Br. 7.)

The Examiner, however, finds that Yoshioka describes that a hardening agent (which may include, inter alia, polyisocyanates or epoxy

compounds) may be added to any of "the photosensitive layer, the protective layer, the back layer, and other layers." (Yoshioka col. 39, ll. 28-38.) At least the photosensitive layer and the protective layers described by Hughes comprise dispersions of polymers. Thus, adding a hardening agent to one or more of those layers, as suggested by Yoshioka, would result in a process meeting the limitations of claims 21 and 22, respectively.

Similarly, regarding claim 23, the Examiner finds (FR, para. bridging 5-6; Ans. 7) that Yoshioka discloses the use of a styrene-butadiene ["SBR"] copolymer latex (Yoshioka col. 25, ll. 38-39), in the image-forming layer (*see id.* at col. 23 ll. 20 ff.). The Examiner finds further that Yoshioka describes the use of an acrylate copolymer in an intermediate layer. (Yoshioka at col. 49, 54-57.) Note that this intermediate layer overlies an SBR latex used in the underlying photosensitive layer (*Id.* at ll. 21-39.) The Examiner also finds (FR, para. bridging 5-6; Ans. 7) that Yoshioka describes the use of a wax emulsion (Yoshioka at col. 69, ll. 49-50). The wax emulsion is used in an upper protective layer that overlies an acrylate latex used in the immediately underlying lower protective layer. (*Id.* at ll. 11-34). Thus, Yoshioka does describe adjacent layers having the components required by claim 23.

In the absence of a more detailed explanation of why these disclosures do not fairly suggest the required layers and their compositions, we conclude that the preponderance of the evidence of record supports the Examiner's rejections of claims 21-23.

C. Order

We REVERSE the rejection of claims 18 and 19 under 35 U.S.C. § 103(a) in view of the combined teachings of Hughes and Yoshioka.

We AFFIRM the rejection of claims 21-23 under 35 U.S.C. § 103(a) in view of the combined teachings of Hughes and Yoshioka.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED-IN-PART

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